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PRE-APPEAL BRIEF REQUEST FOR REVIEW		Docket Number (Optional) <u>DE 020206</u>	
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		First Named Inventor <u>LoBL</u>	
		Art Unit <u>2811</u>	Examiner <u>CRAWE, SARA W</u>
Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request. This request is being filed with a notice of appeal. The review is requested for the reason(s) stated on the attached sheet(s). Note: No more than five (5) pages may be provided.			
I am the <input type="checkbox"/> applicant/inventor. <input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/98) <input type="checkbox"/> attorney or agent of record. Registration number _____ <input checked="" type="checkbox"/> attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 <u>33,089</u>		<u>M Ure</u> Signature <u>Michael Ure</u> Typed or printed name. <u>408 674-0271</u> Telephone number <u>09/21/07</u> Date	
NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below".			
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In re application of

Atty. Docket

LOBL

DE 020206

Serial: 10/527,115

Group Art Unit: 2811

Filed: 03/08/2005

Examiner: CRANE, SARA W

BULK ACOUSTIC WAVE RESONATOR WITH MEANS FOR SUPPRESSION...

Certificate of Fax/Mailing Under 37 CFR 1.8

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Michael Ure
(Name)

Michael Ure 9/21/07
(Signature and Date)

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

RESPONSE—PRE-APPEAL REVIEW

Sir:

The following Remarks are responsive to the Office Action of 08/06/2007.

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REMARKS

The Office Action of 08/06/2007 has been carefully considered. Reconsideration in view of the present remarks is respectfully requested.

Claims 1-3 were rejected as being unpatentable over Cushman in view of Takahashi and Ballato. This rejection is respectfully traversed and reconsideration is respectfully requested.

The present invention relates to a bulk acoustic resonator, of which two principal types are known in the prior art: a film bulk acoustic resonator (FBAR) and a solidly mounted resonator (SMR). The present invention relates in particular to SMRs.

The primary reference, Cushman, described in the BACKGROUND portion of the present specification, relates to FBARs.

The secondary references, Takahashi and Ballato, do not relate at all to bulk acoustic resonators used in bulk acoustic wave (BAW) filters. Rather, they relate to surface acoustic wave (SAW) filters. BAW and SAW filters work on distinctly different principles and have acquired a distinct status in the art. For this reason, it would not have been obvious to one of ordinary skill in the art to combine the teachings of the references in the manner suggested.

Moreover, the primary reference and the secondary references are so structurally distinct as to preclude any meaningful combination. As previously alluded to, Cushman relates to FBARs. As seen in Figure 1 of Cushman, an underside of the FBAR 20 is exposed—there is no adjoining element.

As a result of this structure, it is impractical or impossible to apply the roughening technique of Takahashi. Similarly, it is impractical or impossible to apply the "washboard" technique of Ballato.

Considering in particular claim 1, claim 1 recites a bulk acoustic wave resonator comprising at least a bottom electrode, a piezoelectric layer and a top electrode, a substrate, and means for absorbing or scattering spurious modes, wherein the means for absorbing or scattering spurious modes comprises at least one of the following: a roughened rear side of the substrate; an absorbing layer disposed on a rear side of substrate; and an absorbing layer disposed on a front side of substrate.

Noting in Figure 1 of Cushman how the *substrate 22 is entirely removed* in the active region 34 of the FBAR (and necessarily so), it is perplexing to consider how combination with the secondary references can result in the claimed structure in which the rear side *of the substrate* is roughened to absorb or scatter spurious modes or in which an absorbing layer is disposed on the front and/or rear side *of the substrate*. Applying such techniques to the portion of Cushman in which the substrate is not removed, i.e., the portion outside the active region 34, would be ineffective and pointless.

Withdrawal of the rejection and allowance of claims 1-6 is respectfully requested.

Respectfully submitted,



Michael J. Ure, Reg. 33,089

Dated: 09/21/2007